Pathogen of the month – November 2008

Fig. 1. Stem swelling and bark cracking on *Eucalyptus globulus* (a); Transverse section through *E. globulus* stem affected by *Inocutis jamaicensis* (b); *I. jamaicensis* basidiomes on a grapevine stem (c); basidia and spore (d).
Photo credits: Sebastian Martinez and Guillermo Perez

Disease: Inocutis stem rot in eucalypt species, 'Hoja de malvón' or 'chlorotic leaf roll' in grapevines

Classification: K: Fungi, D: Basidiomycota, C: Homobasidiomycetes, O: Hymenochaetales, F: Hymenochaetaceae

Synonyms & misidentifications: *Inonotus jamaicensis, Inonotus splitbergeri*

Distribution, Host Range & Pathology:

Inocutis jamaicensis is a widespread fungus in the Americas, having been reported from Arizona (USA) to Patagonia (Argentina). It occurs on angiosperm species (native and introduced) belonging to 16 families on both dead and living hosts. It causes a white rot in the trunks and major branches of grapevines (*Vitis vinifera*), and a foliar symptom known as Hoja de malvón. It also causes a stem rot in *Eucalyptus spp*. Plantations of *E. globulus* and *E. viminalis* and possibly *E. saligna* in Brazil have been affected. *Acacia longifolia* is also affected.

Signs, Symptoms & Impact:

Hoja de malvón is an unusual disease affecting grapevines in Argentina. Infected vines develop a white decay rot on the main stem or major branches, with the main symptom being the formation of small chlorotic leaves with a tendency to curl-under. Substantial rot and disease expression may take years to appear and fruitbodies are not always formed.

Incidence of stem rot in *E. globulus* plantations in Uruguay vary from 8-20%. Affected trees, have swollen bases or stems with bark cracking exposing the xylem and are prone to stem breakage. Again, fruitbodies are not always formed. Hence, impact may be underestimated.

Key Distinguishing Features:

Basidiocarps are resupinate to effused-reflexed. Their upper surface is light to dark brown with some grey-black zonation. The hymenial surface is buff to dark brown with 3-5 pores per mm. The hyphal system is monomitic. Basidia are 12-15 x 5-6 µm and produce abundant yellowish to dark brown elliptic basidiospores 6-7 x 4-5 µm.

As basidiocarps are not always formed, molecular methods of detection in wood have been developed.

Management & Control:

Wood rot fungi commonly infect through wounds. Though large dead or dying branches are also a common infection point. Control measures have not been fully investigated. Proper hygiene during pruning and the use of wound treatments may reduce incidence in grapevines. In forestry, using stocking density to manipulate branch size, minimizing wounding during forestry operations and timing forestry operations to coincide with low levels of inoculum may prove useful.

Quarantine:

I. jamaicensis can colonise a wide variety of hosts in diverse climatic conditions and therefore poses a significant quarantine threat. The Australian wine industry and native and plantation forests of *Eucalyptus* and *Acacia* could be severely affected. Wood products, plant material and grapevine stocks from North and South America should be monitored.

Inocutis jamaicensis (Murr.) Gottlieb, Wright & Moncalvo

Further Reading:

Gottlieb, Wright & Moncalvo.(2002) Mycological Progress 1(3): 308
Lupo et al. (2006) *Phytopathologia Mediterranea* 45 (supplement), S110-S116.
Fischer, M (2006) *Phytopathologia Mediterranea* 45 (supplement), S30-S142.

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